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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

VEILLARD, JACQUES

ART UNIT

PAPER NUMBER

2165

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/887,759	Applicant(s) KIERNAN ET AL.	
	Examiner Jacques Veillard	Art Unit 2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,9-13 and 17-21 is/are rejected.
- 7) ☒ Claim(s) 6-8,14-16 and 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/10/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the applicant's amendment's filed on 11/10/2005.
2. Claims 1, 9, and 17-24 have been amended.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-5, 10-13, and 18-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 2, 10, and 18, the claims recite the limitations “---whether the quantifier is a part of a self-join that *can be* eliminated.” The phrase “*can be*” raises uncertainty (doubt) in the claim; it doesn't mean anything will be done. Therefore, there is no guarantee that the quantifier will be eliminated as part of the self-join.

As per claims 3-5, 11-13, and 19-21, they are rejected under the same rationale by virtue of dependency to their base claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-5, 9-13, and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (U. S. Pat. No. 5,615,361) in view of George Koch et al. (Oracle: the complete reference, third edition, 1995, pages 253-266).

As per claims 1 and 17, Leung et al. disclose a system for optimizing SQL queries in a relational database management system by exploiting uniqueness properties using 1-tuple condition (See Leung et al. Title, the Abstract lines 1-5; col.1, lines 10-14), the system uses a SELECT statement which comprises the format: "SELECT <clause> FROM <clause> WHERE <clause> in order to simplify a query in a computer to retrieve data from a database (See Leung et al. Col.1, lines 34-49; col.14, lines 29-32 and lines 60-63). In particular, Leung et al. Disclose the claimed limitations of (a) determining whether a query includes a self-join that is transitively derived through table expression, by providing a software allowing the RDBMS to convert scalar subquery to a join operation and consider different join orders (See Leung et al. col.5, line 31 through col.6, line 62; col.8, line 55 through col.9, line 9); and (b) simplifying the query to eliminate the table expressions and to reduce and to reduce the query to an equivalent query over tables, when the query includes the self-join that is transitively derived through the table expressions, by providing a query transformation for elimination of correlation in the queries (See Leung et al. col.6, lines 63-67; col.9, lines 10-20; col.11, lines 24-33, and col.13, lines 35-59).

It is noted, however, Leung et al. did not specifically disclose the system having the Union operators. On the other hand, George Koch et al. in ORACLE: the complete reference, third edition achieved this limitation by providing a UNION operator mechanism to combine two tables in order to reduce query equivalent over the tables (See George Koch et al. ORACLE: the

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complete reference, third edition chapter 10, page 254 third paragraph; page 256 third paragraph; page 260 to page 262 first paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the optimized SQL queries for exploitation of uniqueness properties using 1-tuple condition of Leung et al. by incorporating the Union operator mechanism taught by George Koch et al. in Oracle: the complete reference third edition. The motivation being to enhanced the system of Leung et al. by allowing it combine two or more tables and restricted data or elements in only one of those tables more efficiently; thus, providing an intuitive, easy-to-use, icon-based interface that enables to capture and analyze the data in the tables quickly and efficiently (See George Koch et al. Oracle: the complete reference, third edition page 260).

As per claim 9, the claim has substantially the same limitations as claims 1 and 17. These limitations have already been discussed in the rejection of claims 1 and 17. Therefore, it is rejected on similar grounds corresponding to the arguments given for the rejected claims 1 and 17 above.

As per claims 2, 10, and 18, the combination of Leung et al. and George Koch et al., as modified, disclose the claimed limitations, wherein the determining step (a) and simplifying step (b) are performed for each quantifier in the query; in order to determine whether the quantifier is part of self-join that can be eliminated (See Leung et al. col.9, line 40 through col.10, line 60).

As per claims 3, 11, and 19, the combination of Leung et al. and George Koch et al., as modified, disclose the claimed limitations, wherein the simplifying step (b) comprises: rewriting the table expressions such that quantified column to be eliminated are substituted by order quantified column in a same equivalence class; and once all quantified columns have been rewritten, removing the quantifier from the query (See George Koch et al. Oracle: the complete reference, third edition page 255).

As per claims 4, 12, and 20, the combination of Leung et al. and George Koch et al., as modified, disclose the claimed limitations, wherein the equivalence class is determined by the presence of join predicates establishing equality among quantified columns (See Leung et al. col.5, lines 17-30, and line 63 through col.6, line 26).

As per claims 5, 13, and 21, the combination of Leung et al. and George Koch et al., as modified, discloses the claimed limitations, wherein the quantifier is only considered for elimination when it is presented in each equivalence class (See Leung et al. col.3, line 63 through col.4, line 28).

Allowable Subject Matter

7. Claims 6-8, 14-16, and 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. The following is a statement of reasons for the indication of allowable subject matter:

Upon searching a variety of databases, the examiner respectfully submits that the prior of record taken singularly or in combination fail to teach or fairly suggest a method or device embodying logic, wherein the *determining step (a) and simplifying step (b) are implemented as a rule-based transformation, the determining step (a) comprises a condition part of the rule, and the simplifying step (b) comprises an action part of the rule that is performed when the condition part is true* as recited in claims 6, 14, and 22.

Other Prior Art Made Of Record

9. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. U.S. patents and U.S. patent application publications will not be supplied with Office actions. Examiners advises the Applicant that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. For the use of the Office's PAIR system, Applicants may refer to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Points Of Contact

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques Veillard whose telephone number is (571) 272-4086. The examiner can normally be reached on Mon. to Fri. from 9 AM to 4:30 PM, alt. Fri. off..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272- 4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'J. Veillard', with a long horizontal flourish extending to the right.

J.V
Jacques Veillard
Patent Examiner TC 2100